Module 3
Safe Work Practices

6/11/03

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Module 3 Overview

- High risk practices to avoid
- Safe work practices and safe work practices toolkit
- Protect yourself and make a personal protection equipment toolkit
- Control the spread of dust
- Exercise
- Discussion

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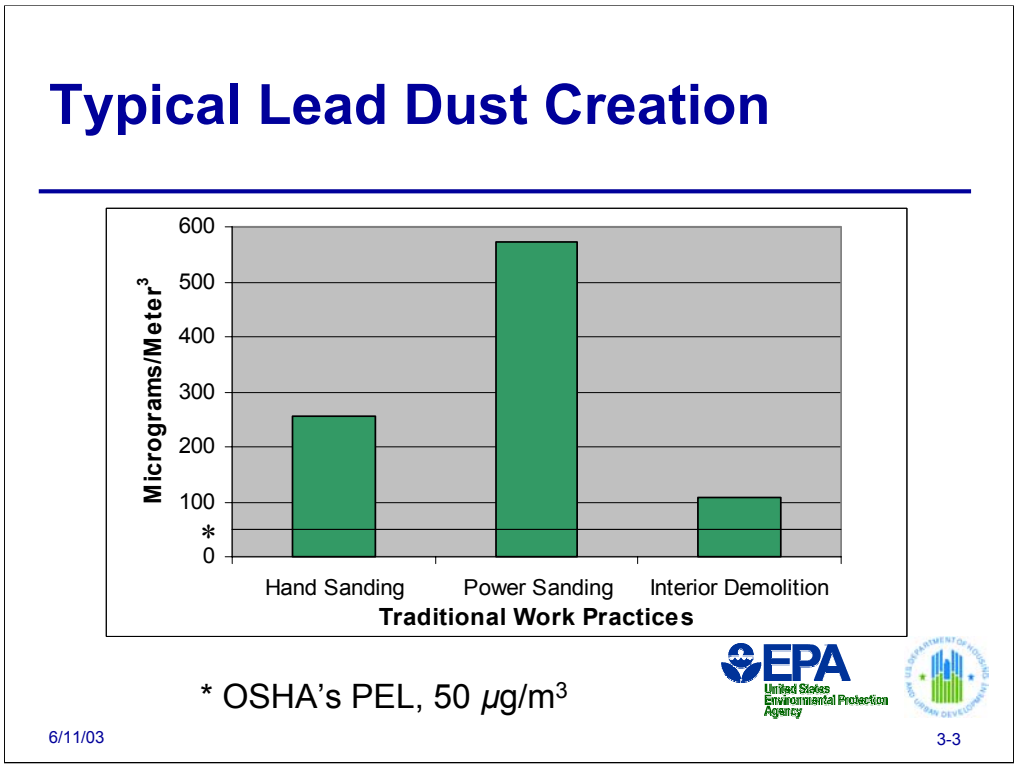
Role of safe work practices

- In addition to proper set-up at the start of a job and cleanup at the end of the job, the third key strategy to minimize the spread of dust is using safe work practices.
- Lead safe work practices are specific practices that create less dust and/or control its spread better than traditional work practices.

Upon completion of this module, you will know

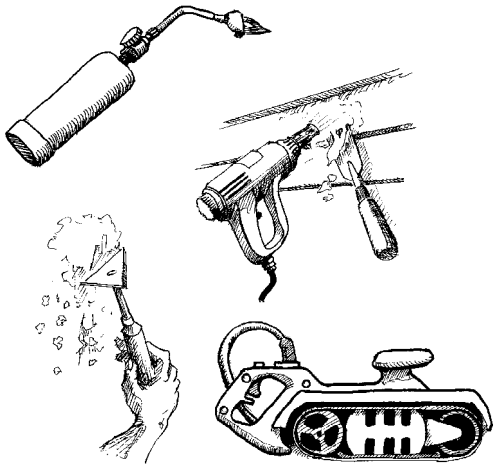
- What high risk work practices to avoid because they create dangerous amounts of dust and paint chips
- What safe work practices to use to reduce and control dust and paint chips
- What tools you will need
- How to apply safe work practices to common renovation, remodeling, and painting jobs



Traditional work practices create large amounts of dust

- This chart shows amounts of lead dust created by three common construction practices: hand sanding, power sanding, and interior demolition.
- The amount of lead dust for each practice is significantly higher than the level where worker protection, such as respirators and protective clothing, is required by OSHA. This level is called the Permissible Exposure Limit or "PEL." This airborne dust is hard to control.
- By using safe work practices, you can control and significantly reduce the amount of dust created on the job. Controlling lead dust at the source of generation is important because dust generated into the air will eventually become settled dust on the ground. Later in this chapter, you will learn safe work practices that can replace these restricted work practices.
- The data used in the chart above are from *Lead Exposure Associated with Renovation and Remodeling Activities: Summary Report*, Prepared by Battelle for the U.S. Environmental Protection Agency, May 1997, EPA 747-R-96-005.

High Risk Practices



- Open flame burning or torching
- Heat gun above 1,100 degrees Fahrenheit
- Power sanding, grinding, abrasive blasting without HEPA vacuum attachment
- Extensive dry scraping and dry sanding

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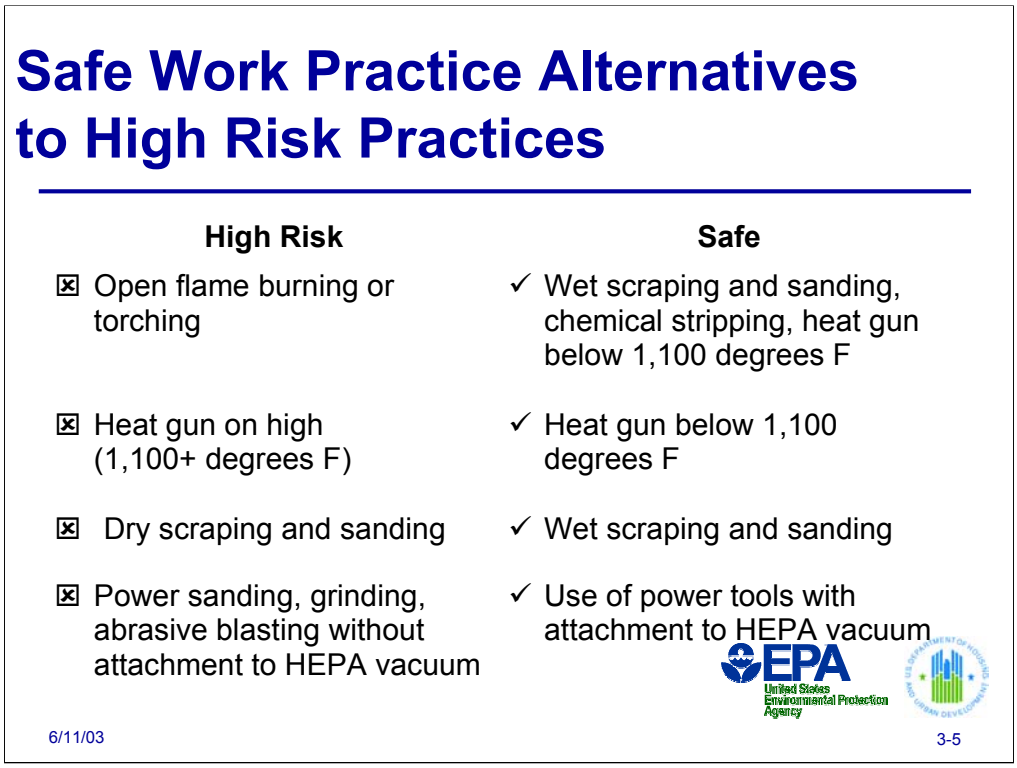
Avoid these traditional work practices

- A key to minimizing the spread of dust and paint chips is to not use certain traditional work practices known to create large amounts of dust and debris.
  - **Open flame burning or torching of paint and using a heat gun above 1,100º F** create fumes that are dangerous for workers to breathe. Small lead particles created by burning and heating also settle on surrounding surfaces and are very hard to clean up.
  - **Power sanding, grinding or abrasive blasting**, even on a small surface, creates a large amount of leaded dust that floats in the air and then settles on surfaces inside and outside the work area.
  - **Extensive dry hand sanding and hand scraping** can also create large amounts of dust and paint chips.

- See pages 9-10 in the *Lead Paint Safety* Field Guide for more information about these practices.

These practices are prohibited in pre-1978 properties that receive Federal housing assistance. If a pre-1978 unit or the family that lives in the unit receives Federal housing assistance, the practices listed on the slide above are prohibited, unless the property has been shown to be lead-free with a lead-based paint inspection. HUD also prohibits paint stripping in a poorly ventilated space using a volatile paint stripper. States, localities, and tribes may also prohibit these practices.



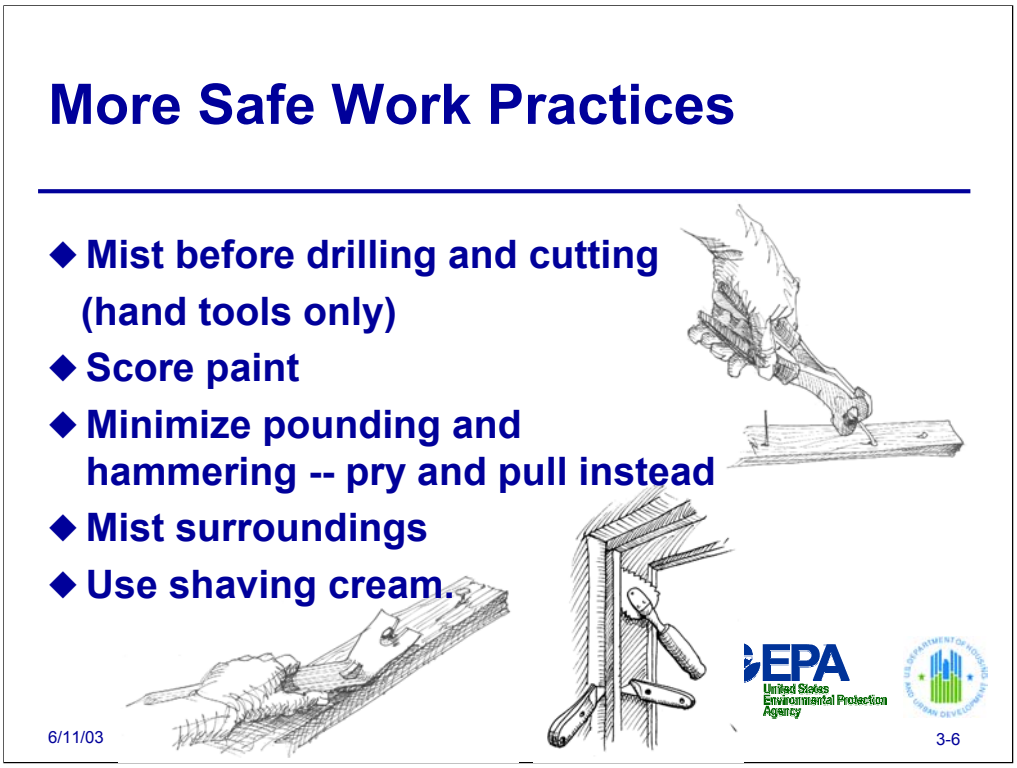
Alternative safe work practices for each high risk practice

- For both large and small paint removal jobs, there are safe work practice alternatives.
- Some possible alternatives are listed on the slide.
- With experience, you will determine which safe work practices work best for different tasks.

  Note: HEPA (high efficiency particulate air) vacuums have HEPA-rated filters that stop 99.97% of particles of 0.3 microns or larger.

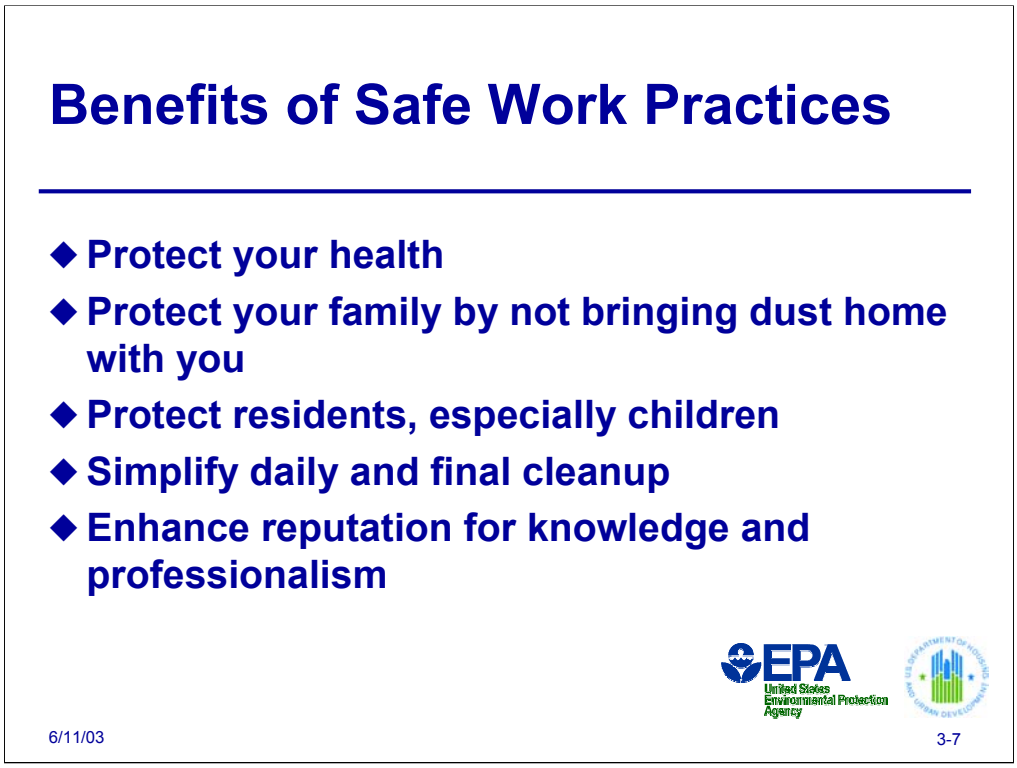
Also keep in mind

- Chemical strippers can be dangerous. Some can cause burns. Methylene chloride is suspected to cause cancer but may be appropriate for exterior work. Types of strippers range from citrus-based (safer) to more dangerous caustic strippers. Follow the manufacturer's directions when using any chemical stripper.
- If building components to be stripped can be removed, such as doors, consider having them stripped off-site at a paint stripping facility.
- Half-face negative respirators do not provide sufficient breathing protection when using methylene chloride strippers.
- See pages 9-10 in the *Lead Paint Safety Field Guide* for more information.



Additional safe work practices

- Mist before drilling and cutting to reduce dust creation and keep dust from becoming airborne and spreading beyond the work area.
- Scoring paint before separating components helps prevent paint from chipping when a paint seal is broken.
- Prying and pulling apart components and pulling nails instead of pounding create less dust and fewer paint chips. Vise grips may be useful when pulling nails.
- Frequent misting of surrounding surfaces with water helps keep dust and paint chips from becoming airborne when disturbed by work activity.
- Use shaving cream or foam prior to drilling or coring.
- Using power tools on heavily misted surfaces can be dangerous if they are wet. Tool blades can slip and water can cause electric shock. When misting, lightly mist the surface and use hand tools only. If power tools are to be used, they should be attached to a HEPA vacuum.
- EPA and HUD encourage contractors to use ground fault circuit interrupters (GFCI's) to help ensure safety while using electrical equipment.



Advantages for contractors

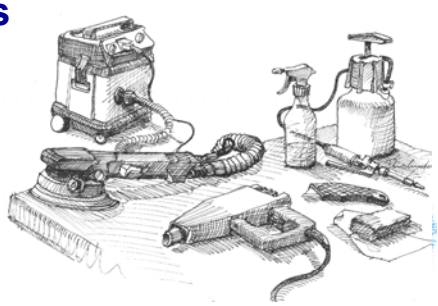
- In addition to being safer for residents, safe work practices have advantages for contractors and workers.

By effectively using safe work practices, you can

- Foster your reputation as an informed and professional contractor who recognizes the risks of lead-based paint and takes steps to help ensure resident and worker safety.
- Gain a reputation for leaving the job site cleaner than when you arrived.
- Help your customers feel safe and reduce their anxiety about the risks of remodeling and renovations.
- Have less dust and debris to clean up at the end of the job.
- Reduce risk of taking leaded dust home to your family.
- Because contractors are required to give customers the lead information pamphlet before starting work, those who use safe work practices can better respond to customer concerns raised by the pamphlet. A copy of the pamphlet is provided in Appendix 4. Information about the Pre-Renovation Education Rule, which requires contractors to give customers the pamphlet is provided in Appendix 5.

Safe Work Practices Toolkit: Tools, Equipment, and Supplies

- Wet/dry sandpaper, sanding sponge
- Mist bottle, pump sprayer
- Tape (painter's, duct, masking)
- Heavy duty (4-6 mil) plastic sheeting
- Heavy duty garbage bags
- Chemical stripper
- Utility knife
- Heat gun
- Vacuum with HEPA filter



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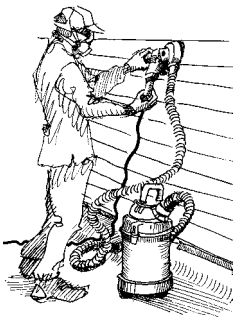
Safe work practices toolkit tools, equipment, and supplies

- There are some basic low-cost tools that you will need for safe work practices. Most of these tools and supplies are widely available from suppliers and home improvement stores.
- These tools are used to help reduce dust and for cleaning while working to keep dust under control.
- You will need several basic supplies to protect floor and ground surfaces, and bag, wrap, and clean dust as work is performed. If dust and debris are contained in plastic right after they are created, there is less chance that they will be spread beyond the work site.
- More toolkit supplies are listed on the next three pages of this manual.
- HEPA (high efficiency particulate air) filters are able to filter very small particles--to be considered a HEPA filter, it must be able to filter 99.97% of particles of 0.3 microns or larger.
- See the Tool and Supply List (Pages pages 75-76) in the *Lead Paint Safety* Field Guide for more information.
- See Appendix 2 for a complete list of supplies in the Safe Work Practices Toolkit.

Safe Work Practices Toolkit: Consider Investing in New Tools

◆ **Large jobs may require special tools**

- Power sanders, grinders, planers, shavers with HEPA filter vacuum attachment



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HEPA equipment for power tools

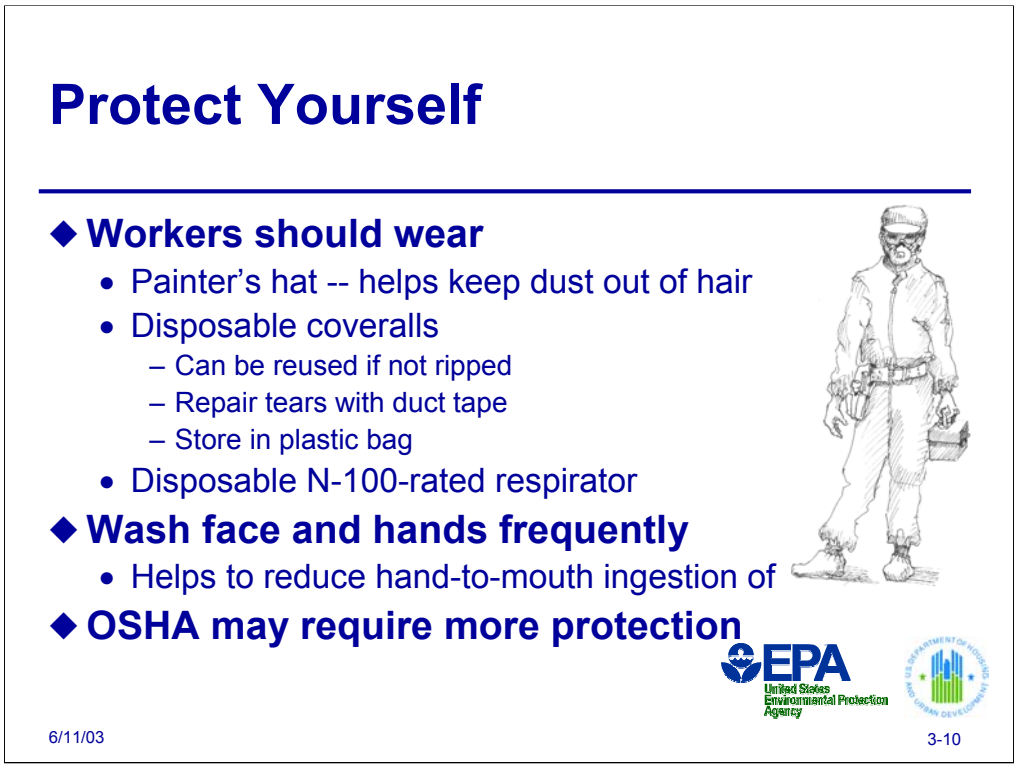
- Because wet methods are appropriate and practical only when using hand tools, adapters and HEPA vacuums are necessary for power tools.
- For contractors who frequently remove paint from large surfaces, an investment in attachments to control dust can make the job go quickly and safely.
- These tools use HEPA vacuums and adapters that help contain dust and debris as they are created. A shroud helps to contain the dust and paint chips as they are created. They are carried to a HEPA vacuum by a hose attached to the shroud.
- It may be possible to rent these tools, if you decide to not invest in them.

Power washing

- Power washing can be used if runoff is properly contained and disposed.

Set-up is still important

- Proper set-up and cleanup is still important because HEPA attachments do not eliminate the possibility that work will spread dust. Nonetheless, these attachments will reduce dust levels and thereby shorten cleaning time and lower costs.
- See the Tool and Supply List (Pages pages 75-76) in the Lead Paint Safety Field Guide for more information.

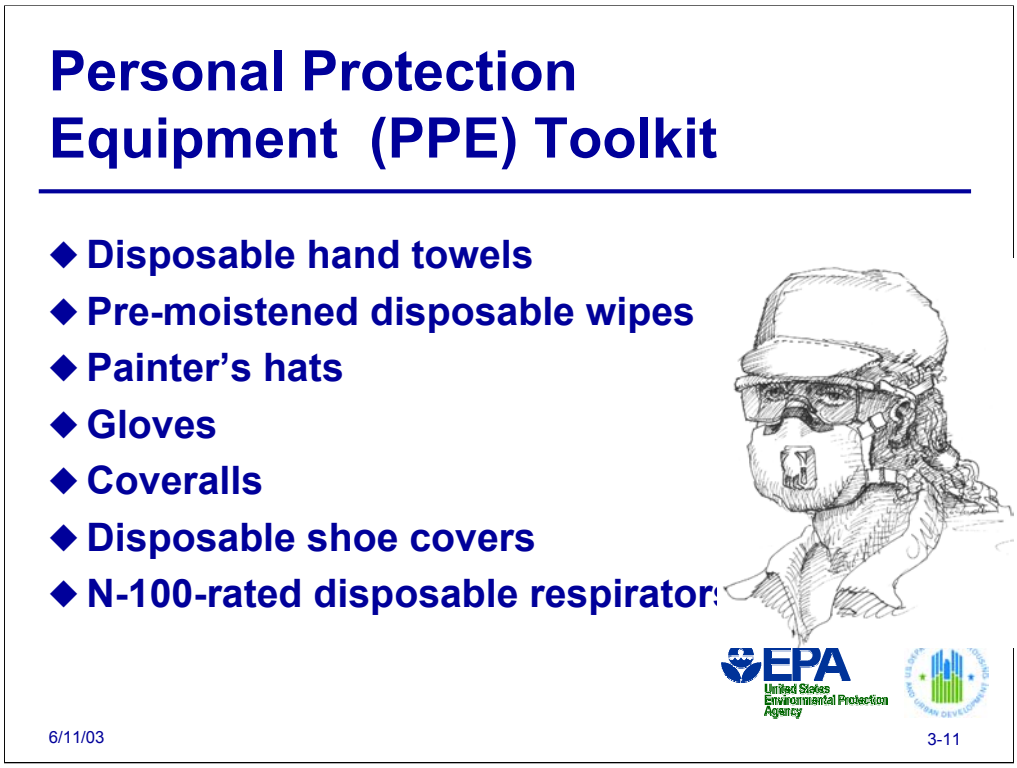


Workers should protect themselves

- **Minimum steps** that workers can take to protect themselves include:
  - **Painter's hats** are an inexpensive way to keep dust and paint chips out of workers' hair. Painter's hats can be easily disposed of at the end of the day or job.
  - **Disposable coveralls** are a good way to keep dust off of workers clothes and reduce the chances for carrying dust to other areas of the residence as workers come and go. The coveralls can be removed when workers leave the work site and stored in a plastic bag overnight. To keep costs down, consider buying extra large size coveralls in bulk and sizing to fit workers with duct tape. Some coveralls have a hood to keep dust out of hair.
  - **Respiratory protection.** Workers should wear respiratory protection, such as an N-100 disposable respirator, to prevent them from breathing leaded dust.
  - **Workers should wash** their hands and faces periodically to avoid ingesting leaded dust. It is especially important to wash well before eating, drinking or smoking and to not do any of these in the work site. Some of the dust that settles on the face around the mouth invariably finds its way into the mouth. Workers should also wash at the end of the day before getting in their car or going home. They can take leaded dust home to their families.

- OSHA rules may require employers to take further steps to protect the health of workers on the job.

- See page 17 in the *Lead Paint Safety Field Guide* for more information on worker protection.



Personal protection equipment

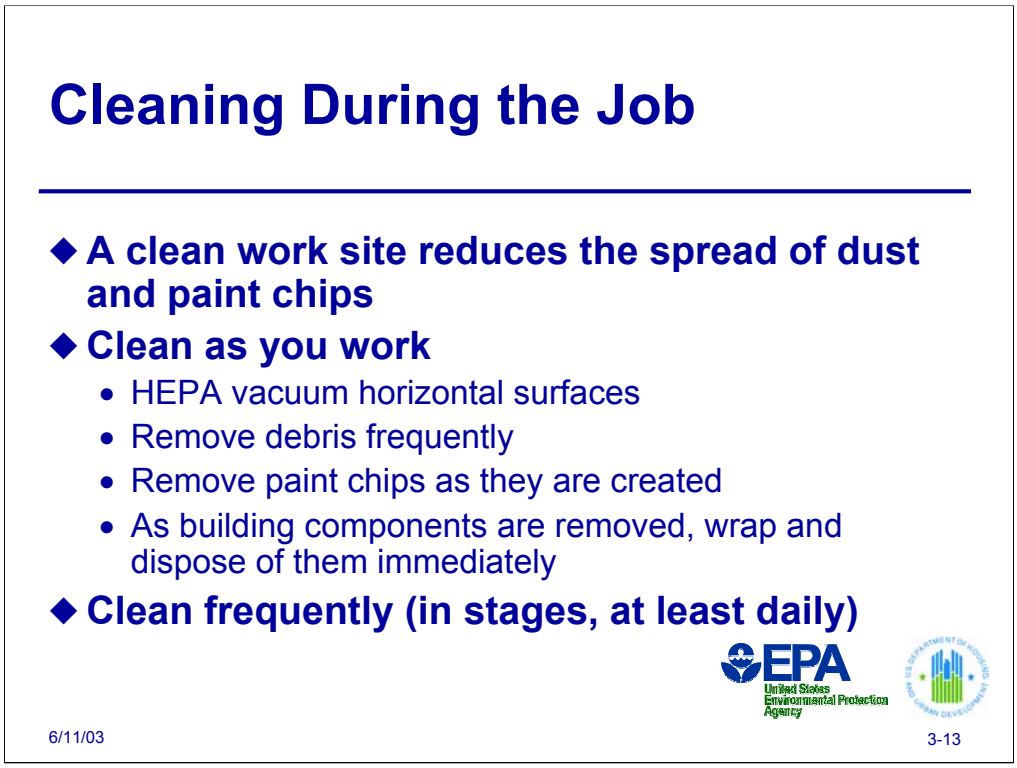
- Disposable hand towels (such as paper towels) and pre-moistened wipes have multiple uses on the job. They can be used to quickly clean surfaces and by workers to wipe dust before leaving the work site and washing before eating, smoking, or drinking.
- "N-100" is a NIOSH rating for respirators. Respirators with an N-100 (or HEPA) rating are approved for use when working on lead-based paint surfaces. OSHA may require a different type of respirator rated for use around lead, depending on work conditions.
- All of the items on this list are readily available at hardware and home improvement stores. N-100 disposable respirators cost approximately $6-7.
- See pages 75-76 Tool and Supply List in the *Lead Paint Safety Field Guide* for more information.
- See Appendix 2 for a complete list of supplies in the PPE Toolkit.

Additional equipment you should consider

- First-aid kit
- Safety glasses
- Ear protection for using power tools

Precautions to take when leaving the work site

- When you leave the work site (the area covered by protective sheeting or the room), take precautions to prevent spreading dust and paint chips to other parts of the residence on your clothes and shoes.
- Every time you leave the work site, wipe or vacuum your shoes before you step off of the plastic sheeting. A large tack pad on the floor can help to clean the soles of your shoes. Remove shoe coverings if you are using them.
- At the end of the day, change your clothes and wash yourself to reduce the risk of contaminating your car and taking leaded dust home to your family.
  - Before leaving the worksite, remove any protective clothing, HEPA vacuum dust from non-protective clothing, and thoroughly wash your hands and face. Throw away disposable clothing or place clothing in a plastic bag to stop dust from getting on other clothes at home.
  - As soon as you arrive at home, take a shower and be sure to thoroughly wash your hair, especially before playing with children. Wash work clothes separately from regular household laundry to stop lead particles from getting on your other clothes.



Clean the work site frequently

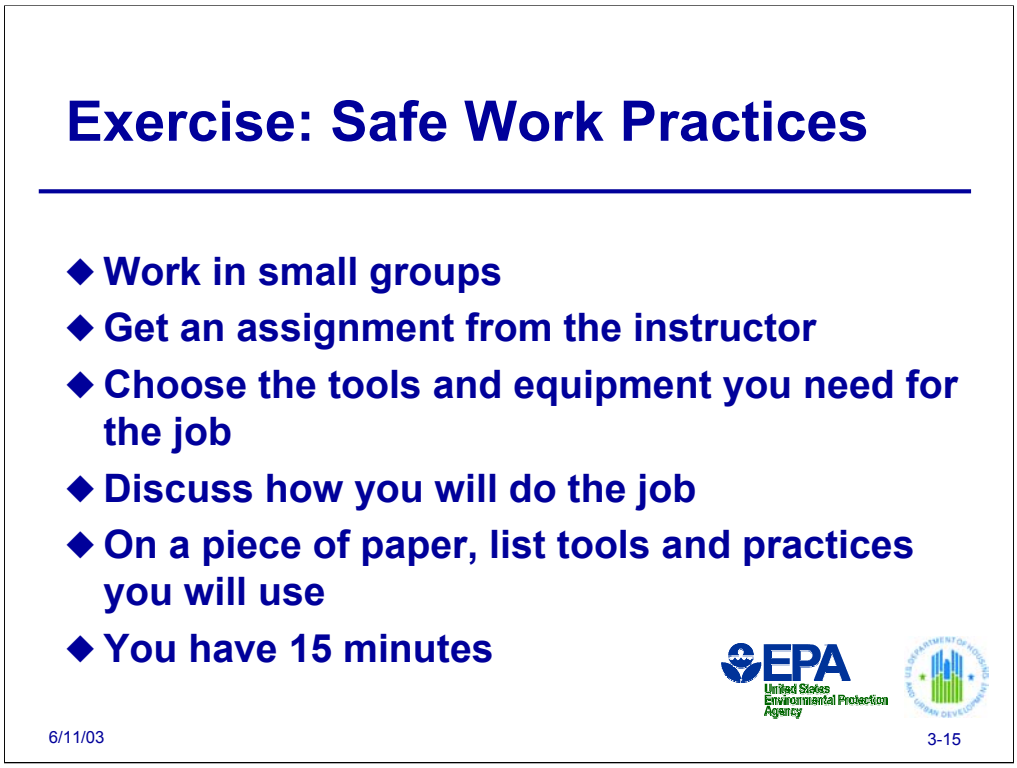
- Cleaning the work site frequently as the job progresses will reduce the spread of dust and paint chips. The cleaning need not be as thorough as the final cleanup. It should, however, keep debris, dust, and paint chips from piling up and spreading beyond the immediate work site.

Cleanup during the job includes

- **Removing debris frequently.** During demolition jobs, seal and dispose of construction debris as it is created.
- **Vacuuming horizontal surfaces frequently.** HEPA vacuum dust and paint chips that settle on surfaces, including protective sheeting. As workers come and go during the work day, this debris is easily spread. Periodic cleaning throughout the work day will help to minimize workers tracking dust.
- **Collect paint chips as they are created.** When removing paint, piles of paint chips can also spread outside the immediate work area as workers come and go from the work site. To keep paint chips from spreading beyond the work site, make sure that they are collected as they are created. Also, periodically vacuum (with HEPA filtered vacuum) or wet sweep and dispose of paint chips.
- **Wrapping and disposing of removed components.** When removing painted components such as windows, trim, and cabinets, wrap them in plastic sheeting and dispose of them in stages. This will prevent the spread of debris and keep residents, especially children, from coming into contact with leaded dust created by work.
- **How often should cleaning during the job take place?** The goal is to keep dust and debris under control, not to maintain a completely spotless site at all times. Every job is different, so clean when it makes sense to without hindering progress. Remove large amounts of dust, paint chips, and debris frequently, at least daily.

Discussion

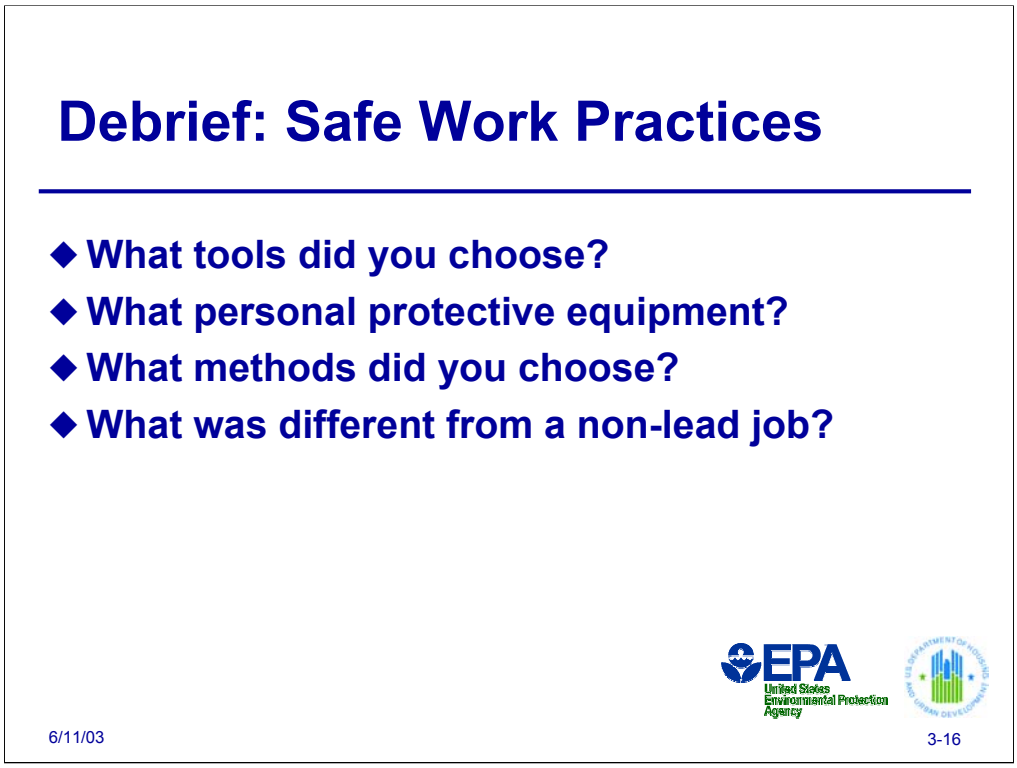
- What are the key safe work practices and equipment?



Work Practices

This exercise gives you a chance to demonstrate work practices. The slide provides basic instruction.

- Stay in your groups of 2 or 3.
- Your trainer will assign you a task.
- Choose the right tools and personal protective equipment.
- Discuss the work practices you will use. Talk about any tools or practices you will do differently from how you usually work.



Work Practices – A debrief

Consider the questions above. Discuss as a large group.

Now You Know

- How to work safely with lead
- Dangerous practices
- Alternatives to traditional practices

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The practices you learned in this module will help you make less dust as you work.

In the next module, we'll talk about how to clean up properly so that no dust is left behind when the job is done.